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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/057,406	04/08/1998	HARALD WERENICZ	94-36-3-US-D	6379

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EXAMINER

AFTERGUT, JEFF H

ART UNIT

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44

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/057,406	Applicant(s) WERENICZ ET AL	
	Examiner Jeff H. Aftergut	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-12,33-36,38-42,44 and 46-56 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 2-12,33-36,38-42,44 and 46-56 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

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Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3-6, 8, 10-12, 33, 35, 36, 39-42, 44, and 46-48 are rejected under 35 U.S.C.

103(a) as being unpatentable over Sanfleben et al in view of Boger et al.

Sanfleben suggested a process of conformally coating a substrate in order to encapsulate electrical components which are present on the substrate. The reference suggested that the conformal coating composition would have included the use of hot melt adhesive compositions including amorphous thermoplastics. The reference suggested that those skilled in the art would have understood that the conformal coating would have been typically applied at a thickness of 50 microns to 130 microns. It should be noted that it has previously been established that the thickness of the coating is directly related to the coating weight applied (low thickness relates directly to low weights). The reference additionally suggested that those skilled in the art would have applied the coating from a nozzle opening (the opening nozzle of a hand held hot melt adhesive applicator). The reference also suggested that the adhesive composition would have a viscosity as low as 1000 cps at processing temperatures but that viscosities as high as 10,000 cps would have been suitable for the operation. Additionally the reference suggested that an alternative coating technique would have included spray application of the hot melt composition. It should also be noted that the melt temperature of the adhesive compositions were set forth in the examples and included compositions which melted at temperatures of 115 degrees C (where

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the melting range defined by the reference is 40-250 degrees C). The applicant is more specifically referred to column 4, lines 21-30 for the processing temperatures. At column 4, lines 55-60, the reference suggested that extrusion coating would have been a useful technique for applying the conformal coating. Column 5, line 67-column 6, line 4 described the thickness of the film being applied. Column 6, lines 41-48 described the viscosity of the hot melt thermoplastic coating and at column 8, line 63-column 9, line 65 the reference described the hot melt adhesive composition in further detail. Applicant is additionally referred to column 10, lines 15-33 for the coating with the hot melt glue gun (note that the reference also suggested that brush coating was an alternative technique) and column 10, lines 34-56 for the spray coating of the adhesive. The reference failed to expressly state that the use of the glue gun and/or extrusion coating would have entailed the use of a gap between the exit of the nozzle and the substrate when applying the conformal coating.

The reference to Boger et al, who is applying a conformal coating in the form of an adhesive, suggested that there were five known techniques for applying the adhesive conformal coating upon the substrate. These five techniques included brush coating, spraying as well as extrusion coating. The applicant is more specifically referred to column 1, line 66-column 2, line 17. The extrusion coating operation is described as a slit die method in which the adhesive is extruded through a slit die and ejected as a film for coating a printed circuit board surface. One reading the same would have understood that there would have been a gap between the board and the nozzle. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the extrusion techniques of Boger et al to apply the conformal coatings upon a substrate as such as clearly the type of extrusion technique performed by

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Sanfleben et al in the process of applying the conformal coating therein. With respect to the specific complex viscosity recited by applicant in the processing, it is believed that the hot melt coating based upon the amorphous polyolefin of Sanfleben would have had this property because it is the same material (amorphous polyolefin in a hot melt composition) as employed by applicant (and thus would have intrinsically had the same properties as defined in the claims).

With regard to the specific spacing between the nozzle and the substrate, note that Boger suggested such processing was known and it certainly would have been within the purview of the ordinary artisan to optimize the gap in order to allow the film to cool to some degree prior to contacting but not to such an extent that no bonding would have been attained (note that a gap of 0.5 mm is an extremely small gap between the nozzle outlet and the substrate).

3. Claims 2-12, 33-36, 38-42, 44, 46-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over E.P. 315,013 (newly cited, previously of record) in view of either one of Maletsky et al '202 or Miller et al (newly cited) further taken with either one of Smith et al (newly cited) or Thomson et al (newly cited) and optionally further in view of Buell (newly cited).

The reference to E.P. '013 (newly cited previously of record) suggested that it was known at the time the invention was made to coat a nonwoven substrate with a thin film of hot melt adhesive (which included the use of amorphous thermoplastics therein) in order to provide a barrier film for a disposable diaper. The film was stated as having been extruded from a "surface nozzle". The reference did not expressly state that the nozzle was not in contact with the nonwoven web. The reference did suggest, however that thicknesses on the order of several microns in thickness were desired by describing the coating weight as being between 15-30 g/m²

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the reference made it clear that those skilled in the art at the time the invention was made knew it was desirable to provide a thin coating upon a nonwoven wherein the coating was continuous and pinhole free. Note that the coating was a liquid barrier film but that it allowed for passage a vapor there through. The reference failed to make mention of the specific complex viscosity of the coating composition in the coating operation. The applicant is more specifically referred to the translation of the reference at page 3, lines 7-11, page 4, lines 1-4, page 5, lines 10-13, page 8, lines 9-13, Figure 2. the reference failed to make mention of the complex viscosity of the hot melt coated (although the reference suggested the use of hot melts including EVA and ATP) and additionally failed to make mention of the spacing employed between the nozzle and the surface (note that the reference described a continuous thin pinhole free coating upon a nonwoven and one would have expected that such would have been applied without contact with the nonwoven as the fibers of the same would tend to break the film apart upon application).

Those skilled in the art of making a diaper would have readily appreciated that hot melt adhesive compositions which had the window of complex viscosity as defined by the claim would have been employed by E.P. '013 in light of the references to Maletsky et al '202 or Miller et al. more specifically, references to Maletsky et al '202 and Miller et al both describe hot melt adhesive compositions which would have been useful in the operation. More specifically, Maletsky et al '202 suggested that thin pinhole free films would have been extrusion coated (coated from an extruder) upon nonwovens wherein the adhesive composition included compositions which were the same as applicant's disclosed compositions (amorphous polyolefin, VESTOPLAST, SBS, EVA). The same compositions described by Maletsky et al '202 must have the same properties of complex viscosity due to the intrinsic nature of the material. The

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reference to Miller et al described the formation of a polyester hot melt adhesive composition useful for the manufacture of diapers which was water soluble (useful in recycling of diaper materials). The composition as described appears to be the same to EASTMAN AQ which was one of the hot melt compositions described by applicant as useful in the operation. The applicant is more specifically referred to paper no. 33, paragraph 2 for a complete discussion of Maletsky et al '202. regarding the reference to Miller et al, the applicant is referred to column 2, lines 13-17, column 4, lines 39-43, column 4, lines 47-50, column 8, lines 51-58, column 9, lines 9-13, column 9, lines 46-56, and column 16, lines 40-63. the references made it clear that those skilled in the art at the time the invention was made would have employed hot melt adhesives in a diaper construction which met the complex viscosity requirements of applicant's claimed invention (note that use of the same hot melt composition would have necessarily had the same complex viscosity). The references failed to make mention of the use of a gap between the nozzle and the nonwoven surface being coated in E.P. '013.

However, providing a thin film onto a substrate by coating a hot melt composition from an extrusion die typically included the spacing of the die tip from the substrate (so that an adhesive film spanned the region between the die tip and the substrate) as evidenced by either one of Smith et al or Thompson et al. more specifically, Smith et al suggested that coating of substrates with olefin polymers was frequently performed via a hot melt extrusion process which involved melting the polymer, extruding the polymer through a slit die to form a molten film of the polymer and depositing the molten film onto the substrate (i.e. there was a spanning of the molten polymer film between the die exit and the substrate), see column 1, lines 26-34. the reference to Smith et al suggested that thin coatings of .25-10 mils were possible using this

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technique. The reference to Thompson et al suggested that one skilled in the art would have understood that coating a thin film of molten polymer upon a substrate would have entailed the application of a film from a slit die followed by depositing the film upon a substrate, column 1, lines 16-21. the reference additionally suggested that fabric would suitably have been coated, column 1, lines 62-67. also, the reference suggested that those skilled in the art would have used the technique to apply thin films at high speeds of production, see Table I for example. Clearly, the references to Thompson et al and Smith et al suggested that those skilled in the art at the time the invention was made would have readily appreciated that the thin film applied to the nonwoven in E.P. '013 which was applied from a surface nozzle of an extruder, would have included the extrusion of the thin film from the slit nozzle and the application of the film upon the nonwoven substrate (where the film spanned the gap between the exit of the slit nozzle and the substrate) as such was well recognized as the conventional manner for applying thin films of hot melt materials upon substrates at high rates of speed as evidenced was known by either one of Thompson et al or Smith et al. it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the conventional hot melt coating techniques of Smith et al or Thompson et al as such were known for application of thin films upon substrates including fabrics and papers in the processing of E.P. '013 where an extrusion device was used to apply a thin film coating of a hot melt upon a nonwoven wherein the compositions employed for application onto the substrate would have included hot melts of ATP and EVA (as suggested by E.P. '013) as well as the specific hot melts described by Miller et al (to provide recyclability to the diaper materials one would have selected a hot melt of the type described by Miller) or Maletsky (to provide thin barrier films Maletsky suggested that ATP was useful).

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Regarding the specific dependent claims, the applicant is advised that one skilled in the art would have determined the specified gap via routine experimentation which was a result effective variable which was dependent upon the degree of adhesion one wished to attain (the amount of time one had to achieve a bond via the heat from the molten film exiting the die, see Waggoner (newly cited) for example at column 2, lines 44-50 and U.K. 688,637 (newly cited) at page 2, lines 40-58). Additionally, one skilled in the art viewing the reference to Miler would have recognized that the polymer was biodegradable and was reprocess able. Also, note that the reference to Maletsky suggested additional traditional polymers useful including block copolymers and EVA (which was suggested by E.P. '013). The particular selection of the specific hot melt selected would have been dependent upon the desired characteristics one wished to attain in the finished end product. Additionally, note that the applicant has previously established that there was a relationship between the coat weight and the thickness of the coating and at coat weights of 15-30 g/m² the reference to E.P. '013 suggested that one would have attained the specified thickness for the coatings. Additionally, the references to Smith and Thompson et al suggested the specified thicknesses for the coatings (on the order of 10 microns in thickness). Note that a slit die typically included a shim therein and such is taken as conventional to the art of extrusion.

While it is believed that the references to Thompson et al and Smith et al suggested that hot melt extrusion such as that performed by E.P. '013 would have necessarily included a spacing between the exit of the slit die, the reference to Buell is cited as further evidence of the same. In Buell, the extrusion of hot melt was applied to a nonwoven wherein the die made contact with the nonwoven web being coated (the exit for the slit is in direct contact with the

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nonwoven). During such processing, the fibers of the nonwoven break up the adhesive being dispensed from the extruder tip and form globules on the surface of the nonwoven web of hot melt adhesive. The applicant is more specifically referred to Figure 2 and column 4, lines 36-47. the reference was unable to achieve a thin film which was a continuous hole free film in such processing but rather the film of hot melt was broken up as the nonwoven was dragged over the die tip. Clearly, one viewing the same would have understood that in order to process according to E.P. '013 to attain a continuous film which was lacking in holes therein the extruder must have been spaced from the surface of the nonwoven substrate (because if it were in contact with the substrate then the adhesive would have been provided in a discontinuous form as evidenced by Buell). It would have been obvious to one of ordinary skill in the art at the time the invention was made that one skilled in the art would have understood that the extruder of E.P. '013 would have been spaced from the nonwoven surface being coated in order to provide a continuous coating upon the same as evidenced by Buell wherein such processing would have included conventional melt extrusion processing as suggested by Smith et al and Thompson et al wherein the hot melt adhesive employed in the operation included those of Maletsky et al or Miller et al for the reasons previously specified.

4. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 3 further taken with Waggoner or U.K. 688,637.

While the references as set forth above suggested that a gap would have existed between the exit of the extruder and the substrate being coated wherein a film would have spanned this gap, they failed to specify the specific amount of the gap. However, as evidenced by either one of U.K. '637 or Waggoner (Waggoner (newly cited) for example at column 2, lines 44-50 and

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U.K. 688,637 (newly cited) at page 2, lines 40-58) suggested that those skilled in the art of extrusion coating would have adjusted the gap in order to ensure adequate bonding wherein the spacing of the gap was set to be small in order to ensure that the film was hot enough to attain good adhesion with the web being coated. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the gap to attain an adequate adhesion of the film exiting the extruder to the substrate as suggested by either one of U.K. 688,637 or Waggoner in the process of extrusion coating a substrate with a hot melt adhesive as set forth above in paragraph 3.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claim 55 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 18 of U.S. Patent No. 5,827,252 in view of E.P. 315,013. Although the conflicting claims are not identical, they are not patentably distinct from each other because the presented claims relate to a method of manufacturing which requires that the substrate be a nonwoven and that the melt be a hot melt material (rather than just a thermoplastic). However, as evidenced by E.P. '013 when forming barrier coatings, the substrate

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being coated with the thermoplastic composition would have been a nonwoven and additionally the thermoplastic composition would have been understood to have been a hot melt composition as evidenced by the same. It would have been obvious to one of ordinary skill in the art at the time the invention was made to form a barrier layer upon a nonwoven with a hot melt composition when making the barrier layer of U.S. Patent '252 as evidenced by E.P. '013.

Response to Arguments

7. Applicant's arguments with respect to claims 2-12, 33-36, 38-42, 44, 46-56 have been considered but are moot in view of the new ground(s) of rejection.

The applicant is advised that the reference to Cardinal has been removed from the prior art rejection. Additionally, while the declaration was cited to show that those skilled in the art would have selected a melt extrusion technique based upon the polymer being extruded, the newly cited previously of record reference to E.P. '013 clearly envisioned that those skilled in the art would have employed extrusion from a slit die to coat a thin film upon a nonwoven in the manufacture of a barrier layer for a diaper. While the reference did not address the gap issue, the references to Thompson, Smith and Buell clearly suggested that a gap would have been provided (and would have been necessary in order to avoid formation of holes in the continuous film being applied. The exact spacing of the die exit to the substrate would have been determined through routine experimentation as evidenced by the newly cited references to Waggoner and U.K. '637.

The rejection which incorporates the references which are conformally coating has been raised because the claims at hand are not limited to nonwoven substrates and thus conformal coating references appear applicable to the claimed invention. Note that the reference to Boger is not being cited for the particular coater used therein (which appears to be of the spraying type)

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but rather to evidence that one skilled in the art would have known that extrusion coating where a film was suspended from a die was known as an alternative to spray coating and that the reference to Sanftleben et al when employing a hot melt glue gun would have been an extrusion coating technique.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 703-308-2069. The examiner can normally be reached on Monday-Friday 6:30-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W. Ball can be reached on 703-308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3599 for regular communications and 703-305-7718 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Jeff H. Aftergut
Primary Examiner
Art Unit 1733

JHA
January 30, 2002